Centre for Sustainable Heritage
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Masters Report

AT THE INTERSECTION OF CONSERVATION AND EXPERIENCE:

A Case Study on Design and Sustainable Collection Management at New Pitt Rivers Museum Research Centre

Presented in Partial Fulfilment of the Requirements for the Degree of Masters of Science in Built Environment : Sustainable Heritage

by

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ABSTRACT

Fomal learning for researchers and the cognitive benefits for visitors had been the traditonal prerogative of musuem institutions. In the process of promoting the concept of heritage conservation to the wider community, museums had gradually institionalized the concept of 'viewer experience" as a way to achieve greater public relevance and in turn, public participation in their mission. However balancing the needs of the visitors while considering additional strain and risk on the collection associated with increased viewrship needs careful consideration. A Case Study exploration of the new Pitt Rivers Museum Research Centre at Oxford University will demonstrate how an integrated approach to balancing the needs of presentation, and visitor experience will enhance the aims of collection sustainability within an anthropological museum setting.

Key Words sustainable museums, collection sustainability, visitor experience, Pitt Rivers Research Centre, collection management

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ABBREVIATIONS

DCMS	Department of Culture, Media, and Sports
ICOM	International Council of Museums
MLA	Museums, Libraries, and Archives Council
PRM	Pitt Rivers Museum
PRS	Pringle Richards Sharatt Architects
PRRC	Pitt Rivers Museum Research Centre
UOM	University of Oxford Museum
OUMHN	Oxford University Museum of Natural History

CHAPTER I—INTRODUCTION

The theme of the 14th Triennial Meeting of the International Council of Museums-Conservation Committee on September 2005 highlighted the understanding that "to effectively conserve our cultural heritage, it is essential to involve the public." (ICOM-CC, 2005). There are now approximately 1, 851 museums in the UK, with 1,445 in England. (Matty, 2004, p. 45) These numbers does not include the approximately 200 smaller privately-run and funded museums that are not in the MLA registration scheme. It is estimated that somewhere between 80,000 and 150,000 people in the UK – 0.3% of the population - visit museums and galleries on any given day (Matty, 2004 p. 15, citing Sturgis, 2003). Museums and galleries has become an essential part of the UK Government's thrust for accountability of public services and access to learning to the broadest segments of the population.

Fomal learning for researchers and the cognitive benefits for visitors had been the traditonal prerogative of musuem institutions. However, the shift in the social contract with the public for museums from insular places of learning to more readily accessible study arenas had increased since the mid 70's. The International Council of Museum established a Committee on Education in 1977 to promote this practice. The current vocabulary among European museum organizations had placed lifelong learning and educational programs at the center of the visitor needs. Purposeful, visitor-focused programs are driving the agenda in many instutions(Morris, 2005 p. 6). In the process of promoting the concept of heritage conservation to the wider community, museums had gradually institionalized the concept of 'viewer experience" as a way to achieve greater public relevance and in turn, public participation in their mission.

Museums, according to the Museums Associations (UK) definition, are institutions that

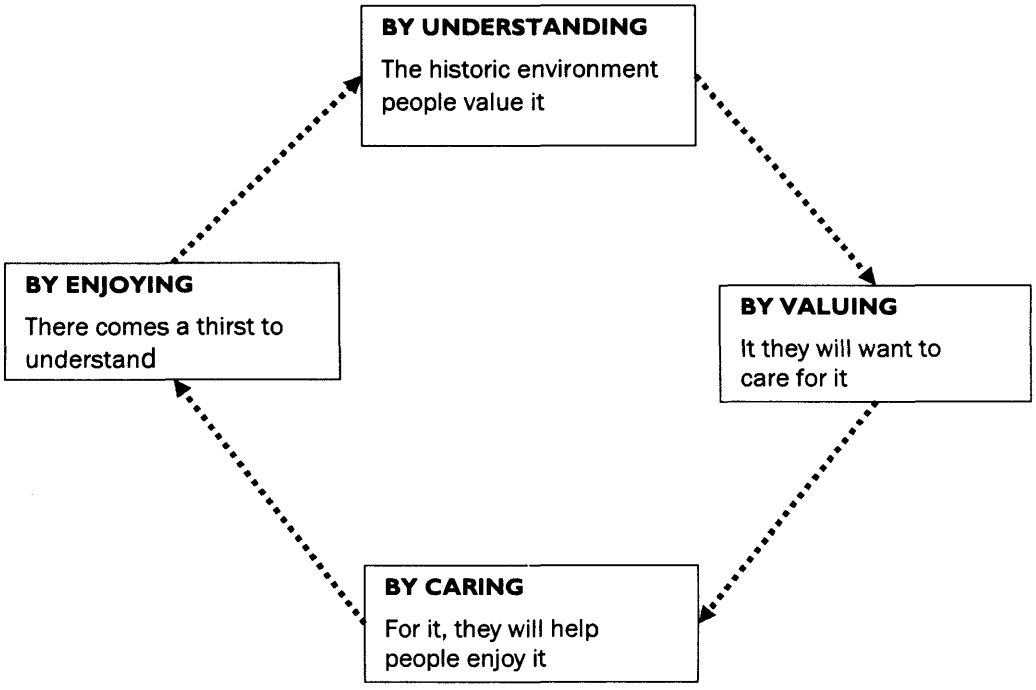
> *"...collects, safeguards, and makes accessible artefacts and specimens which it holds in trust for society."*

There is an essence of obligation for *perpetuity* in this definition. This empowerment indicates that conservation takes priority over all other obligation so that artefact significance can be sustained for future generations. However, this obligation, which

most curators and conservators take seriously, may be seen on a different scale by the visitor.

Museums do want to attract large numbers of visitors while simultaneously upholding the highest standards of presentation and scholarship. Achieving this balance requires museums to think about the needs of the people they want to serve with the same level of intensity they bring to the creation and stewardship of their collections (LW-RDF, 2002).

Conservation in itself is a form of sustaining our heritage, a cyclic process that ensures future generations will reap the benefits of understanding and enjoying their identity and value as people. English Heritage (2005) illustrates the cycle in this context:



The paradox is, during the cycle of caring and understanding, as artefacts become popular visitor attractions, the ones responsible for these heritage must ensure that providing wider access does not create undue deterioration. If access is improved, is the extra traffic, the ensuring wear and tear on the displays, and collection / building management worth it? Ensuring that visitors get into the heritage object

can require better spatial configuration, more comfortable access, or perhaps the construction of an entirely new facility, with the resultant energy and resource consumption, and environmental pollution.

Conflict between presentation and conservation can be both a challenging and motivating issue. On one side, the Museum staff needs to maintain the sustainability mandate in their collection, while at the same time have to justify the conservation efforts to the viewing public whose object-based experiences are at best, set by their own learning agenda, and at worst, un-definable and uncontrollable.

This Report will therefore examine how museums had built more transparent relationships with their surrounding community, open to the interests of their audiences, while trying to keep their conservational mandate. It will then present a Case Study sample on how these over-lapping issues were integrated into a coherent product, which is a new structure, with the aim of addressing the fundamental needs of conservation and presentation.

CHAPTER II
THE MUSEUM EXPERIENCE AND CONSERVATION CONFLICTS

2.1 Rationale for Museums

Museums are one of few truly public spaces that exist to inform and share knowledge and ideas. The collections are reservoirs of embedded stories that are tapped by a whole range of users, whether regular visitors, academics, researchers, or curators, to yield relevant historical information and track social development. From its initial scholarly and teaching roles, museums rationale in the 19th century moved into moral imperatives such as acculturation for society and educational upliftment of the masses. Museums today are considered *service* institutions that still summon up these original purposes: to safeguard, celebrate, and display the collection for the enjoyment, education, and inspiration of the public. (ICOM, 2001)

Whether through traditional exhibits and guided tours, or appealing family-oriented activities and hands on presentation, the informational knowledge that are conveyed in turn help shape society's thinking, and how they look at the world. The association between collection and community is succinct in the Mission Statement of the National Maritime Museum (NMM, 2005):

> *....to illustrate for everyone the importance of the sea, ships, time and the stars and their relationship with people.*

and is evident in the same museum's core responsibility : "to safeguard and enhance the value of its pre-eminent assets", which include " its collection, its expertise and its buildings."

Most major communities consist of citizens from different socio-economic backgrounds and thus perceptions of importance and value for heritage now cover broader perspectives and meanings. There is strong correlation between valued heritage assets and their effectiveness in arousing interest in their protection. A 2001 survey conducted for the American Association of Museums by Lake, Snell and Perry revealed that after their families, Americans rank authentic artefacts in history museums and historic sites most significant in creating a strong connection to the past (AAM, 2005).

2.2 The Institutionalisation of the 'Visitor '

While museums have pulled back from their traditional image as exclusive, intimate venue for cultural learning, there are still gaps in perception that are challenging these institutions, as indicated by this latest statistic on non-use of museums. (Table 1)

Table 1 Reasons for Non-use of Museums/Galleries

Reasons for Non-Use of Museums/Galleries 1999

'Nothing I want to see'	41%
'Museums are boring'	12%
'Difficult to get to/health reasons'	12%
'Admission charges too high'	10%
'Poor transport / too far to travel'	8%
'Inconvenient opening hours'	8%
'My children wouldn't be interested'	6%
'No time'	6%

Source: MORI, 2001, cited in Matty, ed., 2004 , p.41

A 2005 Museum, Libraries and Archives Council report on how museums and galleries/archives impact society found very *little* evidence on any substantial comparative data on social impact. However, the report enumerated *compelling* evidence to support that intangible social impacts relating to "individuals' personal development or the acquisition of so-called 'life skills." (BOP, 2005, p.3). Thus, education / learning became common ground among constituencies in harnessing the purposes of museum and its collection.

New Labour government in the UK beginning in 1997 recruited museums through policy guidance (PPG's) under its four 'themed' agenda: - ensuring efficiency, educational opportunities, increasing access and fostering of the creative industries.

The UK's Department of Culture, Media and Sports encouraged all museums and galleries to, among other things:

- give a high priority to their educational work.
- embrace education as a core objective in the development of mission statements
- work with existing and potential audiences to identify their interests and prepare appropriate activities. (DCMS, 2000, p.4)

The phased removal between 1999-2001 of entrance fees at National museums in the UK produced a 75% increase in visitor count nationally. The Value Added Tax refund scheme (the ability to recover VAT paid for running costs) was extended by the government in August 2005 to 48 University museums and galleries. These programs have the cumulative effect of repeat visitations, and the encouragement of exploration of other regional museums. Since then, the Victoria and Albert Museum in London has enjoyed a 113% boost in visitors from 2002-2004 while National Museums Liverpool visits rose 94 percent (BBC, 2004). Museum policies on removal of "barriers" from those in the lower socio-economic groups, (Table 2) greater "access" to cultural heritage–some as condition for funding agreements with the government–closely followed the Administration's on the same track.

Table 2 Number of Visits to DCMS-Sponsored museums by C2, D, and E socio-economic groups 1998-2003

	1998/99	1999/00	2000/01	2001/02	2002/03
No of visits by C2s, Ds and Es	3.52m	3.33m	4.55m	4.52m	4.77m
Total no of visits to DCMS museums, excluding Tyne & Wear museum service	22.8m	24.18m	27.89m	28.85m	29.52m
% of visits by C2s, Ds and Es	15.44%	13.77%	16.31%	15.67%	16.16%

Source: Matty, 2004, p.23

The reality is that museums in the UK have transformed the way they inter-act in the larger society. They re-characterised themselves through disengagement from their more traditional, didactic responsibility of disseminating knowledge into institutions that are concerned with outcomes, not just programs. (DCMS, 2005)

2.2 The Conservator/Curator and Collection Sustainability

Most cultural assets are 'non-renewable' and are produced under broad historical movements or from specific geographical locations that may have changed its character, or formed by unique skills that are difficult to duplicate. We consider material culture today as finite resource that must be managed appropriately to ensure their significance as storehouses of information. For all its engagement with the community, the museum collection has been the key resource. In a sense, collections validate their existence.

As custodians of artefact, and the buildings that shelter them, conservation staff is at the vanguard to ensure their endurance. Their prime responsibilities can include:

- conservation work
- monitoring and maintenance of optimal environment for presentation and storage
- appraising of artefact deterioration
- contribution to a comprehensive pest management plan
- formulating accession plans
- participation in analysis of new spaces and development works on the building.

It is under this notion of custodianship that artefacts and archival material were often displayed under lock and key, but are still intended " to educate and impress the viewer—the spectacle as a means of gripping the imagination of the museum visitor."(Baker, 1999). The front line job of conservators also means they are the first to take action when signs of collection deterioration first manifest itself.

Conservators and curators are also often considered the authoritative assessor, presenter, and re-interpreter of the artefacts' narratives and meanings to generations of visitors. But as Baker (1999) noted:

> *"how a visitor interacts with ....their setting is determined by personal needs, associations, biases, and fantasies rather than institutional recommendations. "*

Doering (1999) adds that institutional responsibilities for display and exhibition may "focus on the visitors, on the staff, or non-visitors, but they are still seen from the point of view of the museum." Exhibitions may aim for expanded visitor knowledge, but they can include considerations for peer recognition, professional notice, and publicity as well. In many cases, the picture drawn "was chosen on the basis of professional opinion as to what accomplishment will serve the museum best at that moment."

Today, there are changing notions as to how museums and galleries inter-act with and convey the message of its collection with its audience. What is re-constituted in the mind of the visitor may not be fully articulated because visitors' expectations themselves are more sophisticated and more complex than what the above model suggest.

2.3 The Shift to the Visitor Experience and Current Strategic Priorities for Museums

Doering (1999), describes museums as: "like many heritage attractions, are essentially experiential products, quite literally constructions to facilitate experience." Reporting for the Smithsonian Institution in the US, he categorised the museum-visitor relationship into three types:

A. Visitors as Strangers: Because museums tend to be object-based in their teaching concern, majority of their resources are still tied to the historical remit to collection conservation and management. Many curators are justifiably ensconced in this culture, especially at institutions devoted to research. Visitors are assumed to be enlightened and entertained by their visit to the museum, without realistic feedback study of their experience.

B. Visitors as Guests: This model supposes visitors as guests needing direction, and with an appetite for knowledge to be fed by the wise and learned host—the museum organization and staff. This is the most widespread system today, and stems from the idea that museums are here to "do good", transmuted through various educational programs, learning objectives, and outreach programs. The role of 'hosting' extends to such

amenities as enhanced brochures, gift stores, café, and more recently, re-built spaces to accommodate the comfort and enjoyment of visitors.

A former Director of the Hood Museum of Art at Dartmouth College (New Hampshire, USA) states:

"to continually make good on the invitation given...might mean making graphics larger and clearer, retraining security staff, or allowing students to bring small backpacks in the museum." (LW-RDF, 2000 p.9)

C. Visitors as Clients: The third scenario treats the visitor not as the subordinate citizen, but somebody to whom the museum is accountable for. The museum no longer seeks to oblige the learning knowledge and enjoyment that it thought was suitable. Rather the institution now acknowledges the visitor have needs they are obligated to understand and meet.

Increasingly therefore, museums had adopted from the corporate world the management principle of client satisfaction to enhance the **quality** of visiting experience. "Positive experience" by visitors is tied to performance and success of the institution—be it in areas of increased attendance, larger memberships, or better endowments.

A Case Studies report from the USA recognizes that this process captures not just the museum's curatorial strength, but the whole staff work ethos. It encompasses a whole list of service commitment: from arrival, coat and security check, interaction with clerks, the maintenance department's attention to cleanliness of premises, to evaluation of audience reactions on exhibitions and after-visit solicitation of comments. Indeed for any service operation, "the process is the product." (Fitzsimmons & Fitzsimmons 2004). At the Walker Art Centre in Minneapolis, Minnesota, a "secret shopper" service was hired to help evaluate customer service, and gather demographic information to see if the museum is reaching its audience development goals. The lobby desk was re-designed to make it easier for visitors to make direct eye contact with the front line staff. (LW-RDF, 2000 p.16)

To this end, there has been a policy shift in museums/galleries in the UK from measured outputs into outcomes of services and activities, in order to ensure that visitors get the support and learning opportunities they want, and to demonstrate

continuous performance. This seems to parallel the thrust of the current New Labour government's action policy of ensuring "added-value" to its public services.

"Servicescaping", the concept of linking all aspects of the environment under which transaction and consumption takes place, is now reworked to the museum/galleries sector in the effort to focus on the needs of the visitor. The *"experiential"* provision of service must leave the visitor with a feeling of satisfaction, of stimulation, or at least that a benefit was derived. The consequence of ignoring this concept means "in effect ignoring the public, and in particular their customers expectations and experiences" (Beeho and Prentice, 1997, p. 75). The €390 million 'Grand Versailles" renovation project (lasting 2003-2020), is not just a comprehensive conservation, restoration, and upgrading of the palace's building fabric, access, and service systems. It also provides for new visitor facilities and related services such as : restaurants, boutique, library, information centre, and offices designed to help visitors get the most out of their experience. (Gayford, 2005).

Experiences such as thrill, excitement, satisfaction, and learning must flow through the programs and framework of museum life. Otherwise, with the sheer number of museums in the UK and removal of entry fees to Nationals and University museums may spell increased competition, and threaten the sustainability of many, including smaller private museums and galleries still charging entry fees.

However, audacious borrowing from the commercial model can backfire, as in the new Great Court of the British Museum which is recently criticised as an example of 'bad retail design' by Space Syntax, a space planning consultant. The 1-hectare space became the big draw, and by placing the café on the ground floor instead of the upper floors (so that visitors have to weave through the exhibitions) has apparently siphoned the visitors away from the true attraction: the collection. (Gates, 2005)

2.4 Preservation, Presentation, and the Visitor Experience Conflict

The formal articulation of heritage artefacts and the warranting of their sustainability have mainly rested on the conservation/curatorial team. When a site, a building, or an artefact wears out, it may be seen as failure on their part to ensure their conservative agenda. Hence, it is understandable that curators/conservators

present artefacts in secure and environmentally protective setting without necessarily distancing the visitor from their documentary value. One notes this dissonance in the applied arts collection at the Victoria and Albert Museum, with objects kept in glass cases or roped off, but was originally intended to be drank from, played with, sat upon, or worn.

Baker (in Chitty & Baker, 1999 p. 10) states that "Presentation can be destructive—rather than preservative." This can be a result of many over-lapping reasons. There may be pressures to over-interpret, such as in the case of the Hungarian Natural History Museum's creation of an Amateur Naturalist Room, established in 1992. It 're-wrote' the rule in the way its vast array of naturalist and archeological holdings can be engaged by having all artefacts such as stuffed animals and boxes with bat specimens, to be touched; scents smelled from vials,with a small library offered as additonal knowledge base resource (HNHM, 2005). It may be slightly political, such as the desire to be in step with UK government's concept of wider museum access as part of its social justice agenda. It can be economically driven, as in the total reliance on tourism spending (and its creation of other economic activities) by the government in Cambodia for GDP growth, at the risk of damage and erosion by the almost 1 million annual visitors to the monuments of Angkor World Heritage Park. It can be conceptually and personally motivated as well, as in the case of the owners of South End House in Wimbledon who chose to present the interior and furnishings of their private residence to paying visitors *in situ* to convey authenticity, with minimal environmental or physical intervention (Cassar & Peel, 2004).

Traditionally, museums had focused on exhibitions and programs to deliver its missions and message. But there had been very little indicators to confirm if the message was absorbed or got across. (Wavell, et al, 2002, p. viii) The message may have a different meaning to visitors than it does for the creators and presenters. Perry, et al (1997, p. 26) wrote:

> *Once defined primarily in term of their collections, museums are now collection based only as far as their collections serve people—through research, education, stewardship, and more. This shift means that the institution's role must be defined by how it serves the people as by how it preserves objects."*

As stated in the previous section, museums today are orienting their framework and physical facilities to accommodate the visitor experience, rather than to the goals of

the museum's organization. However assessing the 'success' of museum's performance based on visitor's desires or point of view may not sit well with a museum's largely conservation/research/curatorial staff. Doering (1999 p. 9) posits three reasons:

- It might influence museum staff to pander to visitors, destroying the value of museums as cultural institutions
- Many staff members assume visitors really want amusement, entertainment, simplicity, and watered down experiences
- Museum staff infers that visitor-centered research resembles marketing research in the profit-making sector.

This assumes a stance that museum conservator/researcher/curator's values about heritage are superior to those of the visitors. But recent data shows that museum visitors in England usually come from the middle class, educated segment of the population regardless of ethnicity (Figure 2-1 and BOP, 2005, p. 32), with classes ABs and C1s comprising the largest percentage of museum visitors (at 38% and 30% respectively). Presumably these segments are knowledgeable enough to produce their own ideas about the kind of culture they are consuming.

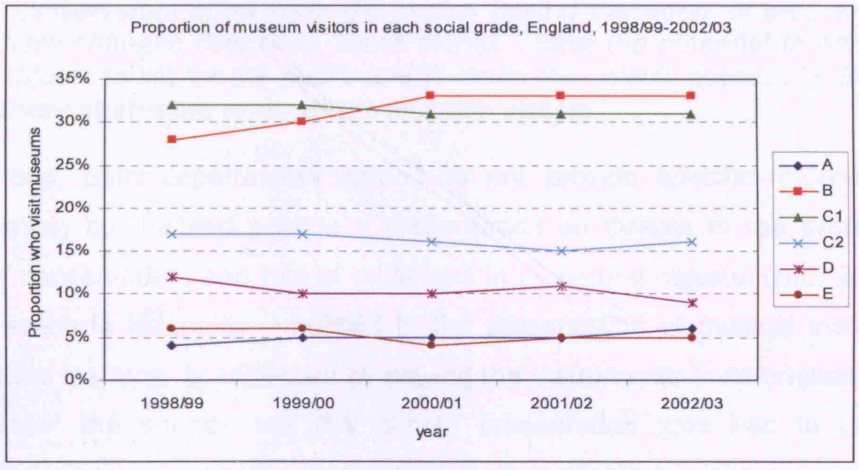


Figure 2-1

Source: Matty, 2004, p. 24

Kelly (1999) further enumerates some reasons why increased access for visitors may be detrimental to the heritage objects.

- Increased wear and tear on the object, such that conservators complain
- Increased level of interpretation needed which might overwhelm the public
- Costs: the set up and running costs might outweigh the perceived benefits
- Staff is under more pressure in upgrading storage, ensuring that standards are

maintained and documentation continues, as well as the added responsibility of dealing with visitors.

- Less access available to the 'serious researcher'.
- Collection more at risk of accidental or malicious damage.

In one case sample, an exhibition of three centuries of American furniture at the Los Angeles County Museum of Art piqued the interest of teachers into letting the Museum's education section to structure a teaching program on what was behind some of the objects, how certain pieces of furniture were made, how they might have originally appeared, and how they were restored. Conflicts arose between the education department and conservators, who felt sceptical about the program and were concerned that focusing on conservation over the objects themselves detract from the viewers' appreciation of the artefacts and bring untoward damage. A museum educator was quoted:

> *"Conservators often know the stories behind the works of art... and have changed over time. These stories ...have the potential to bring objects to life for the public and to make the objects accessible. But these stories are rarely told to museum visitors."*

In the end, both departments agreed to *not* provide specific information on conservation but instead provide a presentation on threats to the artifacts, the value of conservation, and role of museums in protecting objects. (NIC, 2005). A similar scenario is-literally—amplified in the presentation of musical instruments. The visitors learning is enhanced by playing the instruments in its original form—to 'experience' the sound– but this simple presentation idea has to unite two conflicting aims: to make the instruments more available to visitors, and to meet conservator's accountability for preserving these cultural objects. (ICOM-CIMCIM, 2002)

Curators in UK are receiving more and more of the public in their homes each year. (BOP, 2005 p. 15) It seems though, that "presentation has to serve two masters at once: the integrity of what is being presented, and the desire of customers for an intelligible product (Chitty and Baker, 1999 p. 11).

For sustainability of museum collection, the above approach need not diverge, but indeed can accommodate each other in order to promote heritage awareness. Doering (1999, p.13) proposes two factors that affect the visitors' perception of servicescape, and his decision to return:

- **Spatial Layout**—referring to the comfort of the individual
- **Aesthetic appeal**—referring to the ambiance of the place

A marketing and services study by Kutz and Clow (1998) put forwards four factors;

- Physical facility
- Location
- Ambient conditions (temperature, humidity, noise, odour)
- Interpersonal conditions (between client and staff)

Expressly at museums, Kirchberg (1998) concentrated on three groupings of setting characteristics:

- Arrival experience and welcoming (hours, signals, personnel attitudes)
- Orientation and peripheral service in the museum (guides, amenities,)
- Personal communications (manner and responsiveness of interactions

If we are to consider then that museum visiting as an "experiential" pursuit, a kind of leisure activity, the combination of leisure and learning that museums can offer is a valuable asset. Conforti (1995, p.340) argues that charters, mission statements, professional structures and even architecture can stabilize, but also constrict change in a museum's framework within an evolving community.

The choices and tensions that exist in the sustainability and interpretation of heritage may have yet to cease, but this need not be a conflicted direction to take. The next section will present a Case Study where a happy medium seemed to have been achieved: the needs for curatorship, and environmental stabilisation for artefacts (hence, their sustainability), is balanced with greater awareness for visitor needs.

CHAPTER III—CASE STUDY SUBJECT: PITT RIVERS MUSEUM, AND NEW PITT RIVERS RESEARCH CENTRE, OXFORD UNIVERSITY

3.1 A Note on Case Study Methodology

The Case Study method was used to present the argument that new space provision can help reconcile the divergent perspectives between collection sustainability, wider access and visitor experience at museums. In this regard, the author tried to answer two questions:

a. What were the present conditions and constraints encountered in the environment?

b. What specific strategies were used to resolve the conflict?

Citing Schramm, (1971), Yin (2003, p.12) states:

> *" The essence of a case study , the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions; why they were taken, how were they implemented, and with what result. "*

He further describe its rationale: " It is an empirical inquiry that:

- investigates a contemporary phenomenon within its real-life context, especially when
- the boundaries between phenomenon and context are not clearly evident. "

Case study methods are suitable for studies that asks "why" and "how" questions where the investigator has little control over most factors, as opposed to empirical ones that needs to be backed by quantitative data or controlled experiments. Because of the explanatory nature of the subject, this will mean the use of historical or documentary sources to illuminate an issue in the *present time* context . Yin (2003, p.13) further explains:

> *"The Case Study is preferred in examining contemporary events but the relevant behaviours cannot be manipulated,... but adds two sources of evidence that are not usually included in the historian's repertoire: direct observation of the events being studied and interviews of the persons involved in the events. It has ability to deal with full variety of evidence—documents, interviews and observations.*

The case study model was thus chosen in this report to look at existing records and to conduct personal interviews in order to identify, clarify, and explain the real life intervention that were implemented and link it to the effects it had. The report will

then evaluate the case study evidence in the descriptive mode, and later carry it to concluding statements.

3.1 Pitt Rivers: a University Museum in context

Pitt Rivers Museum (PRM) is an ethnographic and archaeological museum independent of, but attached physically to, the Oxford University Museum (usually appended with 'of Natural History'). It holds over 430,000 artefacts (280,000 objects and 150,000 historical photographs) making it only in size to the British Museum's ethnographic holdings (PRM, 20004, p.16). The PRM is a University museum, meaning it is classified as an independent Department within the University system, and is not embedded within a Faculty or School. Nonetheless, PRM is also a teaching facility for the University's undergraduate and post graduate courses in Archeology, Geography, Anthropology, and Museum Ethnography. It receives its financial support directly from the University, and very little from local authorities.

Roodhouse (2003, p. 30) inferred that while the University museums such as Pitt Rivers have a stronger orientation towards teaching, learning and research, they are expected to contribute as well to the University policies of community outreach and greater public profile, while conducting their academic objectives.

3.2 Augustus Lane Fox Pitt Rivers and his Ethnographic Collection

Figure 3-1 Lt. Gen. Pitt Rivers

Lieutenant-General Pitt Rivers, was born in 1827 in Yorkshire and carved a life-long and largely conventional career in the British military (Figure 3-1). He was not a trained anthropologist, but more or less belonged to the tradition of the gifted and largely self-taught amateur whose serious inquiries helped lay the foundations of modern disciplines of archaeology and anthropology. (Cousins, 2004, p.4)

Pitt Rivers' prime interest initially focused on ancient weapons and their uses, but soon expanded into objects of daily activities such as boats, looms, dress, musical instruments, religious symbols and writing implements. He posited that the range of

weaponry corresponded to a kind of sequence that represented mankind's evolution.

Pitt Rivers' view is that objects are part of a series of 'typology'. He believed in 'analogies', wherein artefacts served as a comparative resource to illustrate man's social and intellectual progress. For him, material objects gave an implicit sense of civilization's march and man's endeavour to develop.

Pitt Rivers is now acknowledged with his contribution to the systematic treatment and rationalization of objects as evidence of cultural evolution.' He retired in 1882 but in 1883, was appointed 1st Inspector of Pubic Monuments, responsible for their maintenance, recordation and protection. He died in May 1900.

3.3 Founding and Development of Pitt Rivers Museum

By the end of 1860's Pitt Rivers had comprehended the need for 'a great National Anthropological collection.' His offer in 1880 to give all of the nearly 20,000 objects to South Kensington Museum (now the Victoria and Albert) was declined on the grounds that the ethnological nature of the materials made them more appropriate at the British Museum. Negotiations were opened in 1882 for a deeded gift with Oxford University, which then accepted them two years later. Pitt Rivers attached two conditions with his bequest. First was that the University fund an associated teaching post to lecture on the subjects of the collection and second, a building be erected to house them.

An annexe was designed, attached to the eastern flank of the University Museum (now the Oxford University Museum of Natural History), by T. N.Dean whose father designed the Grade 1-listed Natural History building. Cost constrains are evidenced by the resulting robust but simply detailed brick building, measuring approximately 21 by 26 meters, and opened in 1891. (Figure 3-2)The utilitarian brick exterior facing however contrasts with the decorative cast iron columns and arched roof

trusses that are hallmarks of the interior. Its 3-story central court and upper perimeter galleries are open to the roof structure, originally lit by glazed skylights, but now covered to protect the collection (Figure 3-3).

Warner Land Surveys

Figure 3-2 Cross sections at Pitt Rivers with the University Museum in the background

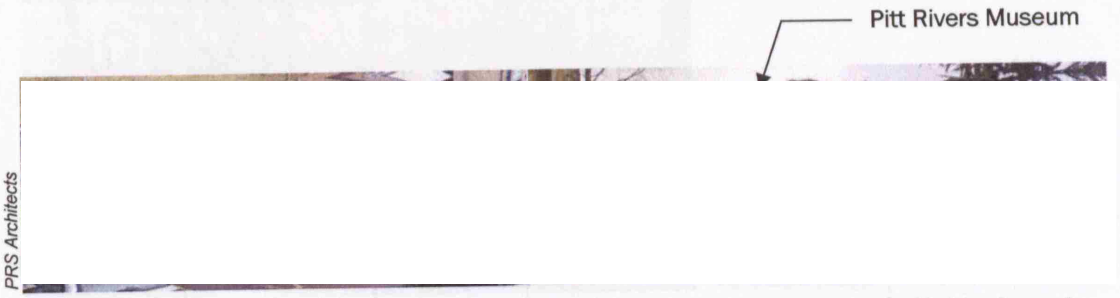
Author

Figure 3-3. The courtyard with exposed roof rafters and covered skylights (above). Decorative cast iron columns and balustrade at perimeter galleries (right).

The Museum holdings quickly expanded in the early part of the 20th century through donor gifts and fieldwork by succeeding collectors . Oxford's own Ashmolean Museum transferred its ethnological materials to Pitt Rivers in 1886, and included significant South Pacific islands artefacts.

As early as 1908, a 2-story lean-to structure to serve as work rooms, storage facilities, and un-packing area, was built on the south face of the museum Later, a contract research office and additional staff facility rooms were fitted in through ad-

hoc partition walls. In 1946 a similar structure dating from 1906 was attached and built on the east side of University Museum, thus forming an `L-shaped accretion of lean-to's that compromised the exterior features of the University and `Pitt Rivers museum buildings. This later addition housed the Balfour Library. (Figure 3-4)



PRS Architects

Figure 3-4. Additions over the years accreted on the east and south flanks of the University and Pitt River museums. They included the Balfour library (left) and curatorial and research offices (right).

To address the need for additional curatorial, exhibition, and educational spaces coupled with continued growth of the collection resulted in a bold 1967 scheme by architect-engineer Pierre Luigi Nervi in association with British firm Powell and Moya. It would have featured a radiating circular gallery for the collection under an egg-shaped concrete dome, an integrated car park, and amenities to secure the storage and congestion problems faced by the museum. However, the high construction cost prohibited the museum from achieving this aim.

The interior atmosphere today at Pitt Rivers has connotations of 'museum of museums' since the object display arrangement, and their original cases, has largely been preserved. The crammed presentation based on functional use, rather than geographical or ethnic grouping as exercised in most museum settings, invites diverse viewer interpretation and homage to the concepts laid down by Lt. Gen. Pitt Rivers. The transparent Victorian-era display cases serve as layered vision panes to the atmospheric, densely filled interior Court (Figure 3-5).

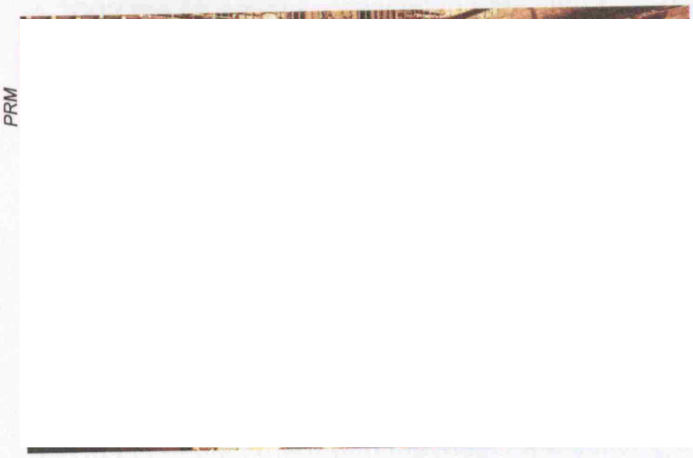


Figure 3-5. The Victorian era glass and wood cases had been retained (left).

The collection includes a wide variety of objects and materials from all parts of the world, concentrating on objects that depict the daily life of man. It included 200 documented items from Captain Cook's celebrated second voyage to the Pacific (17712-1775), fragile costumes from native and aboriginal societies, a range of potteries and masks, baskets in all possible shapes and sizes, boats, ranging from full-sized sailing craft to model canoes, tools and weapons, and musical instruments. The Museum recognized early on the significance of photographs and sound recording as components of cultural interpretation. Thus it now possesses an important collection of early cylinder wax recordings and images from 1850s.

Their very nature of its collection renders them more vulnerable to obliteration, thus they had become 'more rare and treasured, in some cases the sole surviving examples of their kind' (Cousins, 2004 p.36). More often than not, the objects represented material culture prior to foreign or western influence

Despite the fact that the structure was originally designed to accommodate future growth in its holdings, there was no anticipation for 'modern' museum needs, such as conservation and curatorial spaces, public lecture halls, environmentally controlled stores, and office work spaces. The initial founding collection has now grown to a little less than half a million objects. There was no provision in the original design for the spaces needed for cataloguing, organizing and treatment of objects.

3.4 The New Pitt Rivers Research Centre

In 2003 the Museum succeeded in obtaining £3.7 million funding from the Science Research Investment Funding (SRIF) part of the Higher Education Funding for England's effort aimed at refurbishing existing premises, or for new builds at educational institutions. It also obtained nearly £1.2 million from the University to construct what was planned to be a 2-phase construction for new research-oriented building and later a dedicated public facilities structure.

The architectural firm of Ian Simpson Architects was appointed in 2002 to investigate the idea of consolidating all the scattered research facilities together and inter-connect them with the main PRM building at the south side. The schematic plans intriguingly followed the original footprint of the 1880's plan before cutbacks forced the construction of the much smaller, present building. The tender by Pringle Richards Sharatt Architects (PRS) of London was chosen in 2003 to develop and implement the design of the original consultative work. The PRS scheme consolidated the initial 2-phase project into one building which entailed the simultaneous demolition of the lean-to's additions housing the library, administration and curatorial functions. It however reduced the total sum of the project. (

Figure 3-6)

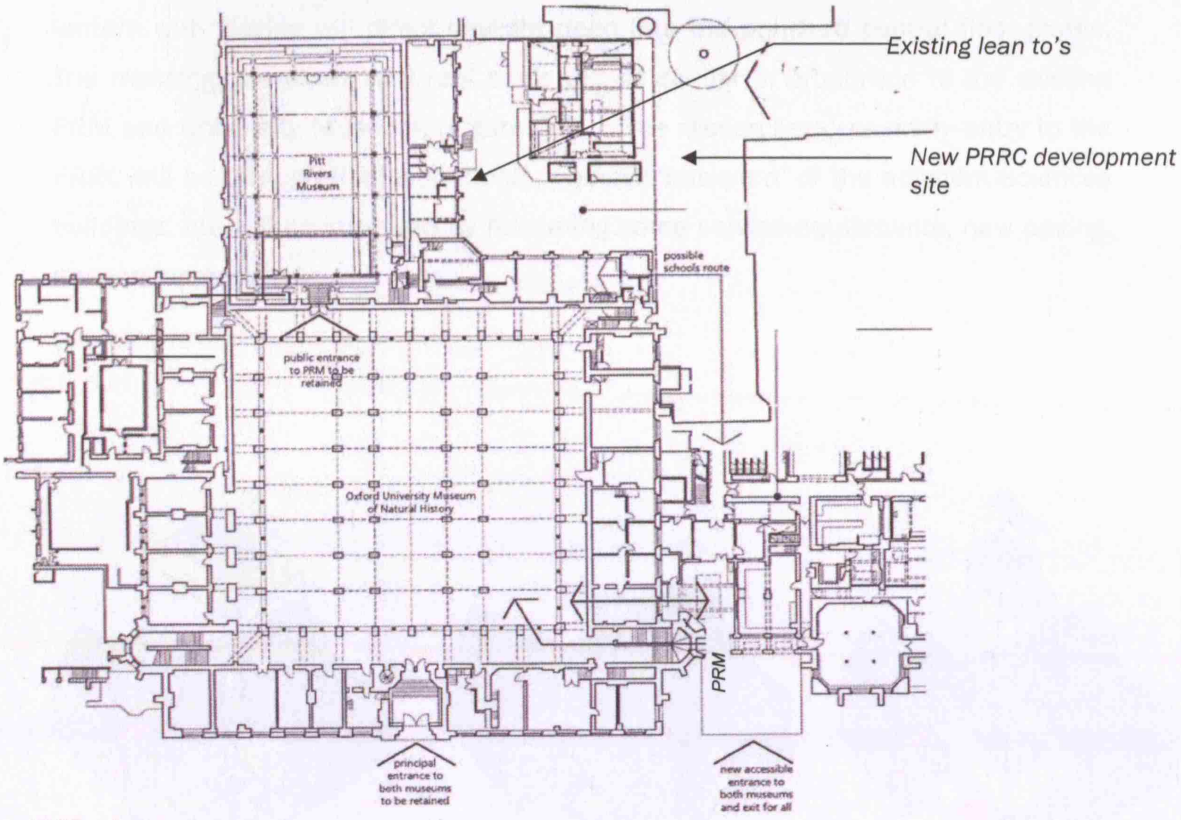


Figure 3-6. Plan view of the relationship between the existing PRM and OUM with proposed Research Centre

The PRS scheme links the now named PRM Research Centre to the Pitt Rivers Museum and the grade-1 listed UOM. The existing—and lone—access spiral stair to the PRM's upper galleries will be demolished and a new opening to the new Research Centre will take its place. A new lift and exit stair will be located adjacent to this new opening, allowing fast and secure access to the PRM upper galleries for the first time. (

Figure 3-7)

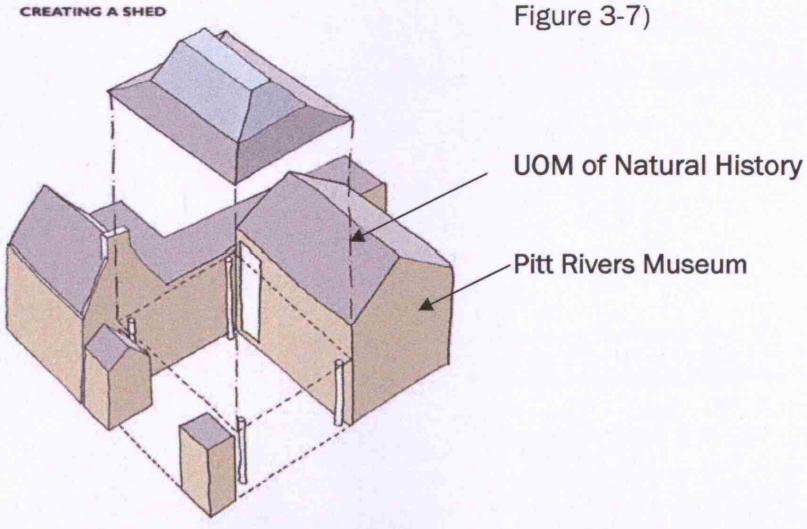


Figure 3-7. The new PRRC will occupy the areas where the out buildings and lean-to's stood

The floor plates will be in the same level as the existing Museum, and a new roof lantern with glazing will direct daylight deep into the punched central floor plates. The massing, elevation, and roof scale will be similar in proportion to the existing PRM and University Museum. (Figure 3-8) . The researchers'–or main–entry to the PRRC will be through Robinson Close, a hereto 'backyard' of the adjacent Sciences buildings, but will be improved by relocating some service equipments, new paving, and landscaping.

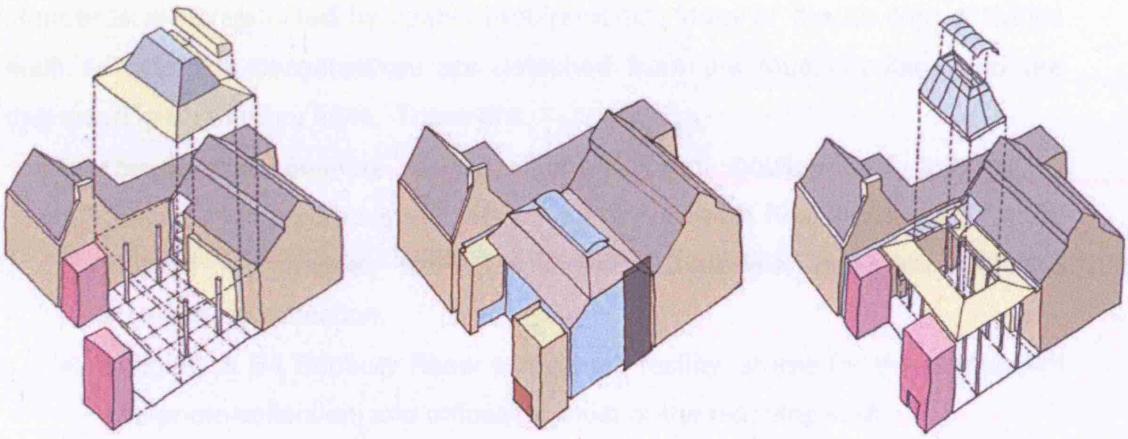


Figure 3-8. Architectural rendering of how floor levels will work with existing PRM (left) and roof volume and illumination scheme (middle, right)

CHAPTER IV
INTERPRETATION AND ANALYSIS OF CASE STUDY

The realisation of the new Pitt Rivers Museum Research Centre reconciled many interrelated weaknesses of the existing PRM, while improving the presentation and research capacity of the staff through the collection. Its aims are at once museological, environmental, social, and architectural, since it involved enlarging and modernising functional aspects of the PRM to greater advantage and opening up the collection to wider access.

3.1 Curatorial Concerns

3.1.1 Space Constraints

Currently, the comprehensive functions entailed in maintaining the Museum's standards are constricted by spatial requirements. Many of the its core activities such as artefacts conservation, are detached from the Museum itself and are dispersed in three other sites. These are:

- The Balfour Building at 60 Banbury Road -houses two galleries, a conservation laboratory, and stores. It is the current Research Centre for the musical instruments, textile, associated materials, and some of the archaeology collection.
- Building at 64 Banbury Road- a research facility, stores for the manuscript and photo collection, and offices for most of the teaching staff.
- Old Powerhouse building at Osney- A major repository of pottery.

The Museum annex at 60 Banbury Road processes the accession and carries out the treatment (freezing of organic materials) of incoming and present artefacts. There is probability of damage risk to the artefacts every time they are transferred from stores to gallery display. According to the Director (O'Hanlon ,2005), University Departments that receive major grants maybe allocated additional land or spaces and buildings such as the Banbury stores bear the risk of being appropriated . In the PRM itself, the Head Conservator (Speake, 2005) estimated that 30% of the items in the cases need to be relocated because off cramped conditions.

Space constraints are a major threat to the collection leading to their damage and restrictions of the museum's research development. (Figure 4-1)There is inappropriate storage for the sacred objects and human remains in the collection. In 2003, the Museum received a bequest of 35,000 images and negatives (Wilfred

Thesiger collection). The photographs and manuscript stores are almost full, and need separate rooms for nitrate films, negatives, and regular prints as an environmental and security precaution.

Figure 4-1 The Upper galleries with its packed object cases

There is constant reshuffling of collections to free up storage space in the Museum and at the same time maintain the typological display order (O'Hanlon, 2005).. A report by McKeith (2002) concluded that the current collection volume in ideal conditions (such as 2.3 m high shelving on roller racks) should occupy 1083 m^3 but instead is compressed into 890m^3. Using the Victoria and Albert Museum model of 10% per 10 year growth in collection meant a new volume requirement of 1800m^3 if a new building is to last 50 years (Figure 4-2).

Figure 4-2 Store conditions at the Banbury Road offices

The Conservation staff routinely engages in correcting previous inappropriate repairs on objects, or improving their older fixings. Thus, the need for a studio space for design technicians who remount objects is an imperative.

The existing size for various lectures, demonstration, working, and conference rooms are lower than the ideal desired by museum staff. The workshop room at 66 m^2 is inadequate for storing equipment and materials used in building the displays. Larger materials are currently stored in the Museum Gallery itself, while long timbers are placed along passages. (Figure 4-3)

Figure 4-3 Existing conditions at the Workshop (above) , Conservation (upper right) and Research offices (lower right)

3.1.2 Functional Constraints

Access to the collection is central to the teaching program of the existing post graduate ethnography courses. The dispersed locations of collections prevent viable teaching functions to be implemented. The efforts for retrieval of artefacts, such as unpacking, transferring and recanting from stores to teaching facility wastes curatorial and teaching time.

There is need for a Seminar Space shared by all curators and their researchers with 2 months stay. The Museum needed a lecture room to facilitate teaching using the collection, and a room used regularly during term time at approximately 5-6 hours a day (McKeith, 2002). The lecturers at Banbury Road are isolated from the collection at PRM galleries, devaluing its full realisation as a teaching museum.

Research is an integral part of the Museum's work, and a significant number are externally funded 'resource enhancement schemes' that enables key documentation, cataloguing and dissemination of materials held by the Museum. Only in April 2004 did curatorial staff were able completely synchronize the location,

number, and associated database for all 20,000 objects on the ground floor Court. (PRM Annual, 2004 p. 25)

The Photo and Manuscript department at 64 Banbury hosts 130 research visitors a year, and about 500-600 enquiries (McKeith, 2002). Indigenous communities, mainly from North America, visit the Museum's collection 4 to 5 times a year to discuss presentation issues , research artefacts, and to perform traditional rituals. (PRM Annual 2004, p.14). However, they cannot perform essential ceremonies on the human remains in stores because of cramped conditions. Visiting researchers (students or full-time academics from abroad), sharing space with exhibits in the upper galleries.

There is currently not enough desk space to lay out , catalogue, or show artefacts to visiting groups. The museum lacked general facilities such as changing rooms for gallery attendants, tea rooms for staff and Museum volunteer group, storage for equipment, and reception area for both people and goods. The Gift shop at the entry serves as the virtual reception and orientation stop, stretching the capacity of the shop staff.

3.1.3 Collection Management Constraints

Conservators at Pitt Rivers conduct work on a variety of materials and objects such as animal hides, metal, stone, wood, and even parts of human remains. Most of them are made from organic sources, and often not intended to last longer than one's lifetime. The Conservation department prescribe temperature and relative humidity parameters and recommend appropriate solutions for collection care objectives, such as UV screening at glazed areas and lighting levels. (Speake, 2005). Pest management is undertaken in all 3 sites of the Museum as part of an Integrated Pest Management strategy. The Department also prescribes a list of acceptable finishing materials for any new space construction.

The installation of insulation, shielding of the glazed roof panels, and re-roofing in 2000 seemed to have relieved the temperatures fluctuations in the PRM Galleries, as per monitoring on the Courtyard in 2003-2004 (**Appendix A**). However, RH is not controlled. Photos, the most sensitive material to conserve, are stored without going through a buffer or acclimatisation zone. The present RH at 40 is deemed to dry, when the ideal should be 44 , at 2+/- . The re-roofing work lowered the risk of UV

radiation on the galleries below but there are still bright spots exceeding 50 lux which can be damage the textiles. (Speake, 2005)

The Balfour Library presently holds 15,000 books and 8,000 pamphlets, plus 300 journals and serves as the teaching/research facility for the School of Anthropology and Museum Ethnography and as a research library of the museum. (PRM Annual, 2004) At an estimated rate of 8-10 lineal meter of additional shelving growth per year, (McKeith, 2002) there is very limited room left for new acquisitions.

3.2 The Visitor Experience

3.2.1 Collection and Presentation Constraints

The Museum has retained the original set-up and cases in the Court and Upper galleries to display its collection. The new PRRC will not create new openings along the gallery wall butting the new Center, and thus will not interfere with the current display. Thus the massed power of the numerous objects will continue to enlighten and enthral those visiting the Museum. The museum will remain as valuable memory bank of various cultural traditions, as well as how collecting evolved in museums.

But as the collections expand, the physical limitations of the will building become apparent. Visitors often remark how crowded the space in the museum is (Cousins, 2004). As'leisure'-time experience, the Galleries must be more efficient as a source of factual information. Object experiences beckon for settings that are un-encumbered and afford immersed thinking, such as imagination and recollection.

3.2.2 Access and Education Constraints

Approximately 150,000 people visited to the Museum in 2004 (PRM, 2004 p.2). It represented an increase of only 3.7% from last year but visitors had grown in double-digit percentages since 2001. The Director justifies the lower numbers by opting for 'quality rather than quantity' approach. School visits attract about 20,000 students annually. In 2005 it won the Guardian Newspaper Family Friendly Museum award in recognition of its children-friendly programs and positive encouragement to hands-on explore the environment of the conjoined Pitt Rivers-Oxford Museum of National History facilities.

The current main entry is through an opening at the rear side of UOM . What would have been a grand vista to the Court is presently blocked by a wall partition serving as temporary exhibition space. (Figure 4-4),

The museum is open free of charge, 7 days a week. Educational links with community schools is quite well established. Joint educational activity with school children allowed them to also visit the Conservation laboratory for lessons on artefact handling and storage.

Figure 4-4 Floor plan of the casework in the ground floor Courtyard, showing the partition that blocks the view of the over-all interior.

The only access to the upper galleries is thru spiral stair and this poses risk to both collection and users. Female visitors must also share the three WC's for women at UOM.

3.3 The new PRRC: Addressing the Weaknesses

Once complete in 2006, the scheme for the new PRRC will equip the present Pitt Rivers Museum with research infrastructures and public facilities it needs to respond to the thousands of new visitors it receives annually without altering the original displays.

The building is designed according to British Standard 5454:2000 which addresses collection standards for archival and curatorial materials.

3.3.1 Space and Function

The new PRRC will re-unite on one site most of the Museum in one site, allowing research and teaching to be conducted alongside the object material already on display in the adjoining Court and upper galleries. This will bring back to the whole complex the academic staff so that their expertise are more readily available to the 150, 000 visitors a year the Museum now receives (PRS, 2004).

The entry vista will be improved by removing the temporary exhibition wall, which returns the entry to its original panorama of the whole Court, heightening the entry experience as one gazes at the 11 meter totem pole at the end of the Court. From this point the visitor is led to a new public access and display are area carrying the same floor size it replaced.

The *Ground floor* (Figure 4-5) will address the educational needs of both students and visitors with new Lecture Theatre, Seminar Room, Resource Centre and Education office. A new Temporary Exhibition area will have have movable walls such that it can be enlarged (as it encroaches to the adjoining Education Room) as needs arise. A 72 sq. meter Workshop with compartmentalized area for wet and soldering functions will be incorporated within the new building.

The *First Floor* (Figure 4-6) will have most of the new Curator / Researchers offices. These will have full height windows and are naturally ventilated as they face the new landscaped yard below. This floor will also have most of the Archive Rooms and Store for the Photo and Manuscript collections. A New 58 square meter Balfour Library with almost 460 linear meters of shelving will be located here. There is a skylight sensitively located on the roof which will stream natural light into the space all the way down to the Resource Room below.

The *Second Floor* (Figure 4-6) will contain most of the Conservation Rooms, located such that they abut the existing PRM and UOM walls, where the massive walls contribute to stable environments of these rooms. The Object Handling, Cataloguing, Photo, and Research areas will all be adjacent to , but separated from one another, smoothing the work flow among those functions.

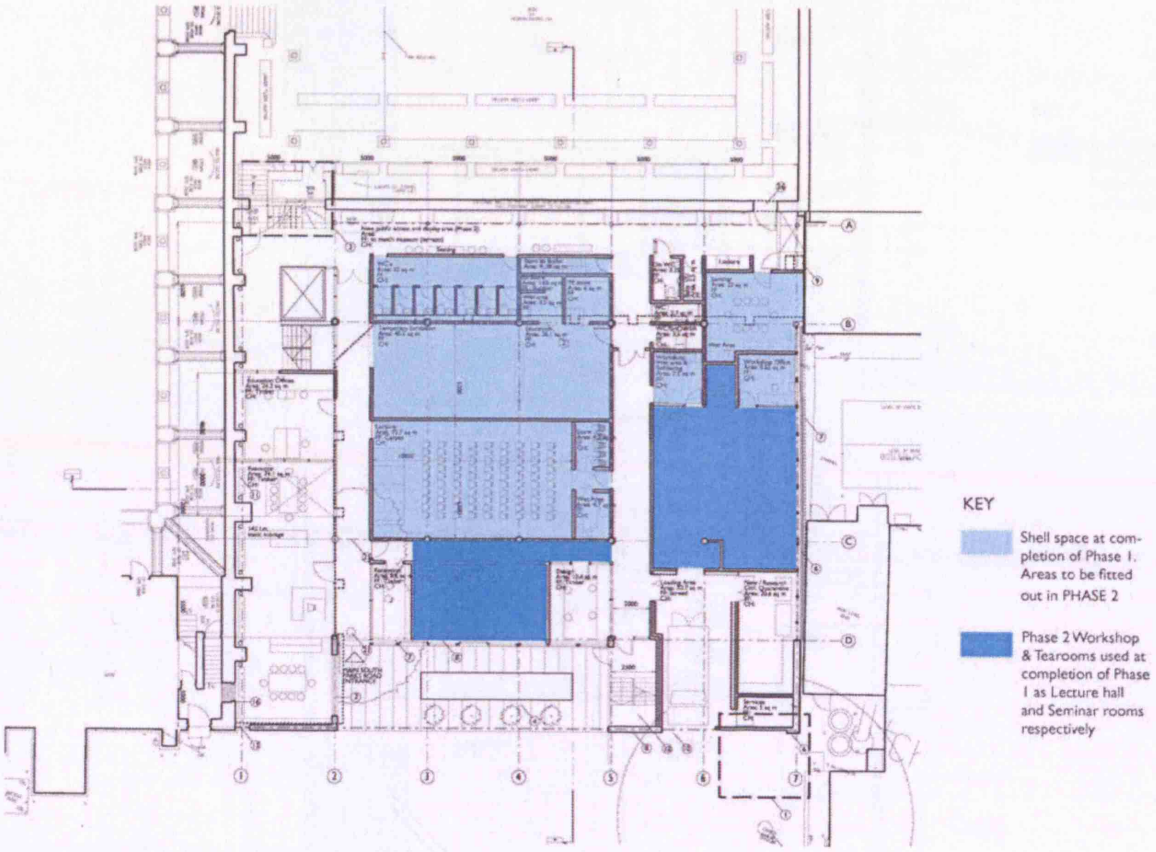


Figure 4-5 Ground Floor Plan

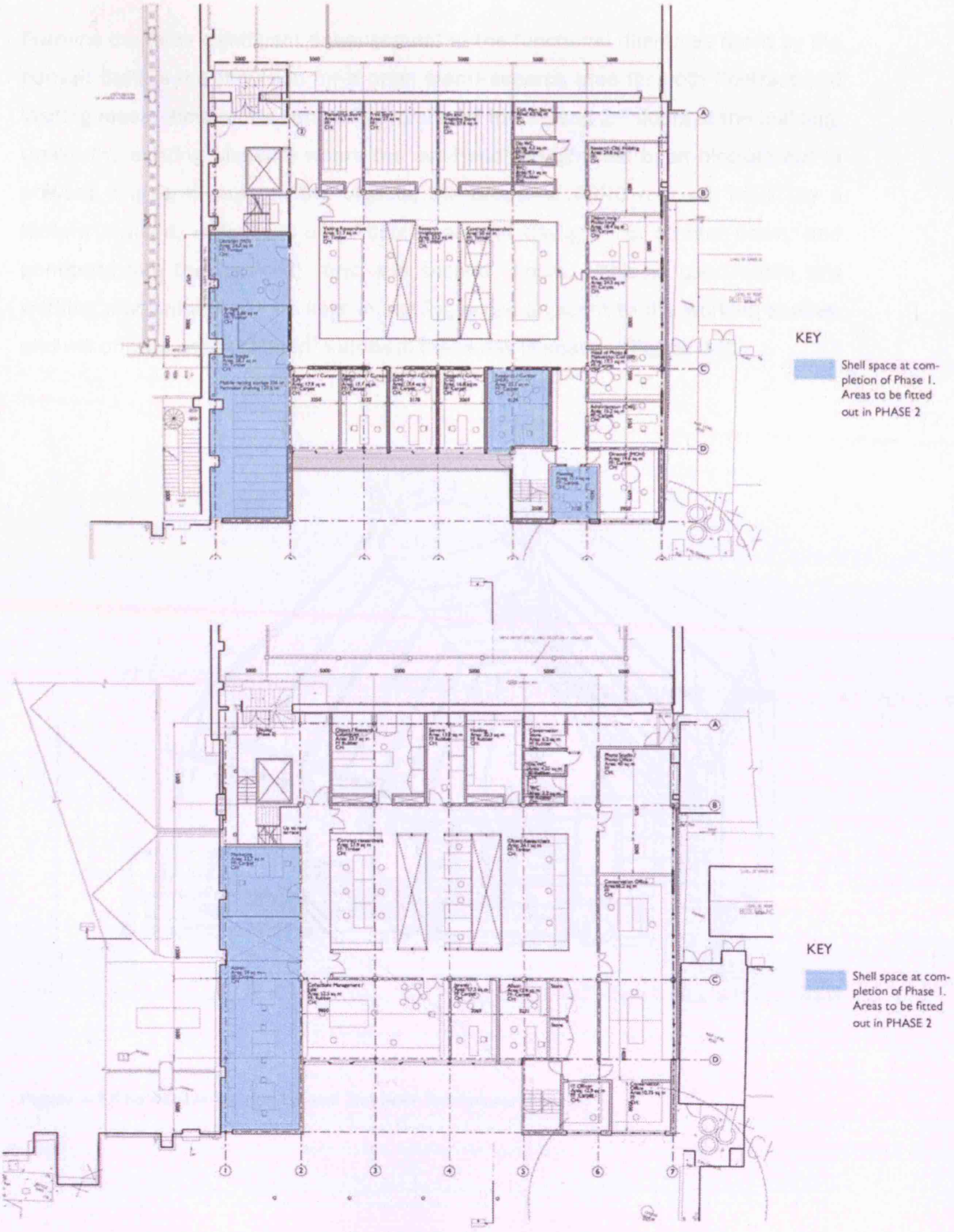


Figure 4-6 First Floor PLan (above) and Second Floor Plan (below)

Perhaps the most significant enhancement to the functional dilemmas faced by the current Staff is the provision for a open plan Research area for both Contract and Visiting researchers in the centre floor plates of the 1st and 2nd floors of the building. Unlike the existing Museum where the overhead daylight had been blocked out to prevent long-term harm to the objects, the proposed PRRC roof will have by a lantern skylight, which will allow quality natural daylight to stream down, and penetrate into the 'pierced' first and second floors. Objects used within this working environment will be kept in holding areas adjacent to the working spaces, and will only be used for short periods in these day lit spaces. (Figure 4-7)

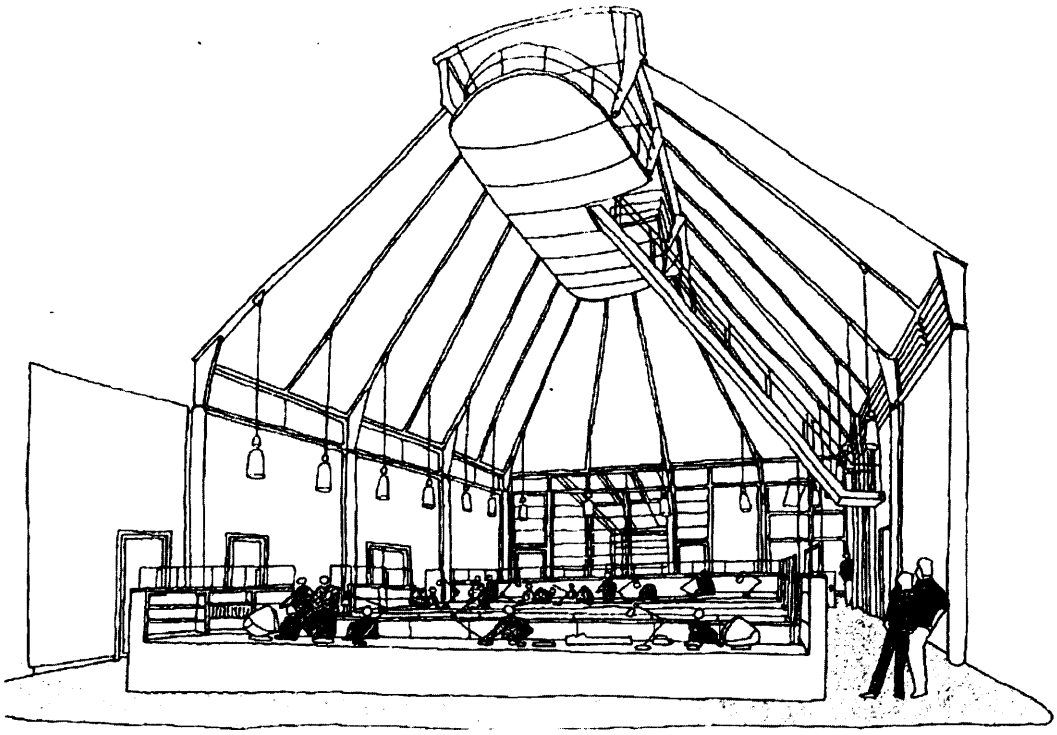


Figure 4-7 The Atrium on the 1st and 2nd floor Researcher Areas

3.3.2 Access

IN attaching the new building against the walls of the existing PRM and the listed UOM, it creates only one single opening to the walls of PRM, avoiding any disturbance to the densely packed casework presently installed against the upper walls. The new floor levels will match the existing Museum, and thus will allow effortless movement between the research and gallery areas.

The original spiral staircase which has been problematic in terms of use and its narrow width, will be replaced a new vertical circulation core of stairs and lift, providing a series of lobbies as access for both the public and staff via a secure barrier.

Unisex water closet rooms will be provided on the ground, first, and second floors as well as disabled toilets for the public will be added on the ground floor. As part of enhanced amenities for the public, lockers will be provided, including locker storage for pushchairs. These new facilities will make a significant improvement to the visitor experience, especially for younger children still on prams, or those needing clothes change.

3.3.3 Environmental

The work specified that bricks from the demolished lean-to's be conserved. The Contractor working on the site will re-used the material on other building projects.

The green heart of the building project is the use of an air exchange device via the atrium space on the central research areas on the 1st and 2nd floors. As inside air temperature rise above 24 degrees Centigrade, the natural stack effect of rising warm air will be discharged air through louvered openings around the skylights. This scheme is quite dramatically expressed by exposing the timber beams and a wood ceiling 'lamp' that will deflect the light before entering the space. (Figure 4-8)

Meanwhile, the perimeter rooms on the south and east sides will be naturally ventilated with operable windows. Although an all-timber construction (from structural framing, floor slabs to wall partitions) using wood from managed forests was conceived as alternate building form, concerns raised by the Conservation department on wood off-gassing influenced the decision to return to a steel-framed building.

The areas needing mechanical environmental control such as storage for artefacts, films, negatives, and prints, is located on the parts of the building adjacent to the PRM, where the stability of the existing building mass can contribute to providing a more stable environment.

On the exterior, walkways provided as an amenity to the Perimeter Office areas on the 1st and 2nd floors also serve as sun shading to the glazed windows below. The building fabric itself will be load-bearing stone façade. The thick wall construction will help modulate the diurnal fluctuations in temperature and relative humidity inside the building.

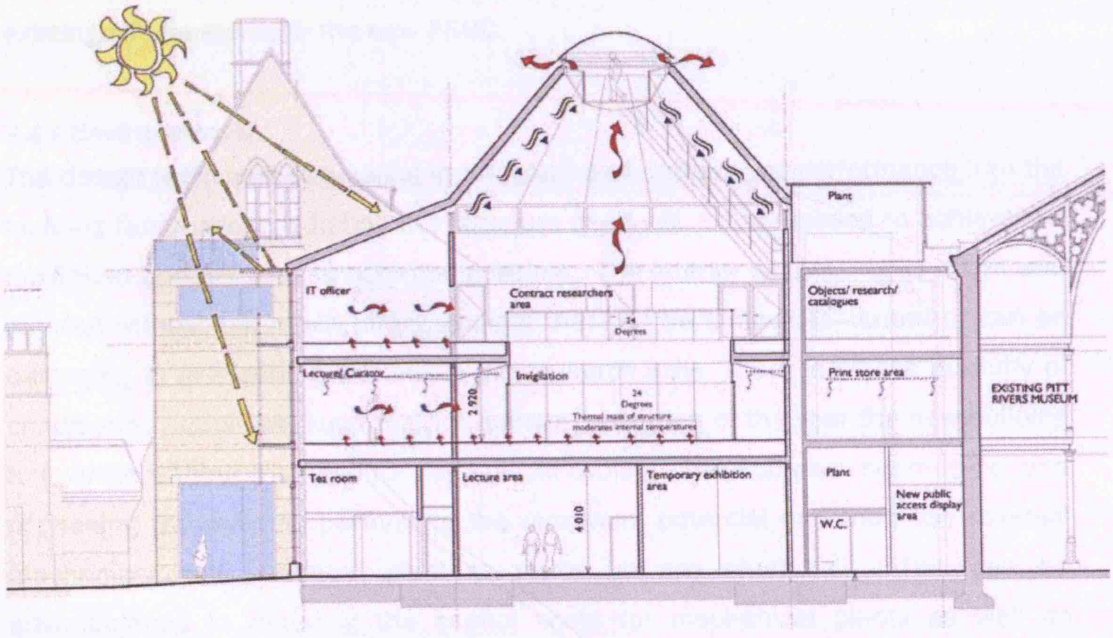


Figure 4-8 Passive ventilation scheme at the atrium area

3.4 Comments

The PRM's mission is to:

> *"Celebrate human ingenuity and creative skill. It is committed to bringing worldwide collection to public attention encouraging the sharing of knowledge and inspiring deeper understanding amongst people of all culture, ages, and abilities." (PRM Annual, 2004)*

Because of the spatial and functional constraints, it was clear that the environment within, and around the collection need radical improvement. The new lay-out, and increased space allocation of the PRRC will make it possible for PRM to care for its collection following standard practice. By responding to the environment, the new building enhanced the long-term sustainability of the collections. However, many materials housed in old buildings have acclimatised over many years to the local environmental conditions (Hughes, 2002). It is important that environmental fluctuation is minimised as much possible during the transfer of objects from the existing off-site stores to the new PRRC.

3.4.1 Environmental

The design team was successful in integrating environmental performance into the building fabric and in addition the structure itself will be harnessed to achieve the maximum passive cooling potential possible. The interior scheme looks bright and airy but without too much direct sunlight that can be difficult to control or can be damaging to artefacts, especially in the research area. There is limited quantity of conditioned supply air, such that for a great proportion of the year the new building to operate without the need for mechanical cooling. The approach seem to be one of making the building perform to the maximum potential and then use minimal mechanical and electrical plant to make up any short fall. This can be advantageous in reducing the capital costs for mechanical plants as well its maintenance and operation

The very act of enclosing artefacts in mechanically modulated structures means we also need to provide an environment free from risk of fire, theft, system failure, un-controlled air, or pollutants. All these activities uses energy in order to care for heritage objects and later put them in display. In this Case Study, the strategy is a low-energy one: natural day light is harnessed; there was clear intention to use passive energy for ventilation; and the thermal inertia provided by massive wall

sections will help control the fluctuations in RH and temperatures that so affect more sensitive objects.

3.4.2 Visitor Experience and Conservation

The new PRRC will provide an environment more attune to the experience of the visitors, from the casual viewer to the serious scholar. The provisions of more appropriate entry, and access to the Upper galleries means they can a revel and engage in the atmosphere and dense collection contained in the museum. The infrastructural support for unrestricted and aesthetically and intellectually pleasing interpretation is balanced against the needed support to minimise handling and prevention of future deterioration to the heritage objects.

However, there are concerns that may impinge on that enjoyment. The light levels in the Court and galleries seem too low since the original glazed roof was blocked. This action was completed to protect the sensitive artefacts but we begin to question what benefits can be derived from observing the display at such low light levels. The provision for temporary exhibit space at the new PRRC might relieve some of the space constraints by allowing certain displays to be presented on rotating basis. Perhaps this can mean open presentation where visitors can get a hands-on, more up close engagement, rather than having most of collection locked up in casework. As Ashley-Smith (1995) said in discussing risk to objects: "Use increases benefit." In order words, there are legitimate causes for damage to objects that will not affect its underlying heritage value. A more scratched, chipped, or less lustrous weapon from the upper galleries will have only a slight effect on our enjoyment.

The new PRRC has addressed the past under-investment in infrastructure needed by the museum staff and compounded problems of accessing artefacts. The spatial dislocation of material objects from the academic user–teachers and learners—will hopefully be reconciled. It will also lessen the dilemma of deliberately limiting the access to those who have the right to use / see the artefact material because of risk of damage. (Figure 4-9)

In retrospect, this Museum has directed its attention to caring for its collection, cataloguing its existing and important newly bequeathed holdings, improving their documentation, and endeavouring to re-align its teaching functions with the

collections in the total context of a Museum setting. The institution's main priority became the preservation of its historical content. There is active engagement among Museum Administrators, University lecturers, and curatorial and conservation staff in drawing on the collection for active study and learning of ethnography and the history of museum collecting itself.

With Pitt Rivers' requirement that someone be appointed to lecture on the subject of the collection, he ensured that anthropology became accepted as a suitable subject for academic research. Hence, the Museum is patently a teaching and research institution interfacing with a University department to meet the academic needs of its core audience: the University students and staff. The restricted access base seems to hamper the wider stated objective of better engagement with the community.

The facilities reflect the learning institution nature of PRM. Their space needs were assessed in conjunction with developments in research, teaching, and learning. They are evidenced by provision for lecture, demonstration rooms, handling areas, and teaching galleries. The museum visitor has similar concerns: the serious enthusiast or the volunteer wants to actively engage with the objects to learn about material culture. But as long as the focus for conservation, teaching and research overpowers the PRM's daily concerns, its essential being as 'service' provider based on showcasing its collection is not deepened.

There is high level of documentation efforts for the thousands of objects and this begs the question: this activity is important to whom? In what perceptive ways can we measure the impact of cataloguing to the visitor's enjoyment of PRM and the new PRRC? Thankfully, PRM has made available on the Internet the digitised catalogue of its holdings, and object-based knowledge transfer through this medium will support wider 'virtual' and real community participation. Perhaps the production of multimedia CD's, (such as the British Library's 'Turning the Pages' project) on some of its weaponry objects may enliven the visitor experience without damaging their fragile state. This can extend to audio recording of the traditional musical instruments displayed in the Galleries, or live performances with replicas. An interesting development is the use of wireless mobile devices that visitors can access as they walk through the museum, receiving information real-time via a museum central portal. (Abbott, D, 2005)

In the recent past, there had been a benevolent moving to and fro between conservation of objects and the desire to make them accessible. We are now getting to the stage where the need to conserve is balanced by the imperative to educate. The new PRRC wove together these ideas in a project that hopes to satisfy the delivery of service to visitors and maintain the values so embedded in the collection.

Figure 4-9 Perspective drawing of the new PRRC as it would look from the approach on Robinson Close

CHAPTER V – CONCLUSION and RECOMMENDATION

Bradley (in Cassar, 1999, p.35) states that "the greatest problem in all building projects is getting the user requirements right." Museums buildings eventually must cater to the needs and requirements of two users: the *collection* and the *people*. It also has to straddle two main objectives:

- to address a high level of conservation commitment to the collections
- to create a welcoming, user-friendly building that directs their attention to the rich and educating presentation inside.

As the building is completed, it is beneficial to assess the outcome of the whole exercise. Smith (in Cassar, 1999, p.45) suggests addressing the following questions from the point of view of the museum:

- Did you get what you wanted? If not, why not?
- What, if anything, was done to evaluate the building at the end?
- How did it get to the end?
- Did the building function the way it was intended for both those that work within as well as the visitors?

The proposed new Pitt Rivers Research Centre exemplifies an integrated approach to balancing the needs of collection sustainability, presentation, and visitor experience within an anthropological museum setting. The collaborative relationship between client, end-users, and building design team developed a product that delicately balances the principles of environmental design, the specifications of conservative strategies, and the wider prerogatives of visitor access and enjoyment. The building worked within the often stringent functional and environmental hierarchies of the organization (the Museum) but at the same time accommodated its evolving response and open-ness to the community and users.

In looking at greater access to collections–be it visible storage, expanded exhibitions, open displays, or virtual access–we also need to take into account the interest of the 'internal' group that might have a competing interest: curators, conservators, researchers. We might have to ask the need as to why fully cater to the experience and individual learning of the visitor.

In the end however, museums do ***need*** visitors. The success of a museum visit depends on many variables, which include the personal preferences, aptitudes and moods of the individual visitors. The main intention is how a museum can give its visitors exactly what they want and need. Ideally, users could adapt their visit to a museum, accessing exhibits and their supporting materials in uniquely fitting ways, and truthfully engaging with the heritage material.

Another area we should look into is visitor responses to the physicality of the museum, and their individual responses to what they experience. How many of them realise the research and conservation functions of the PRRC and the Museum itself versus treating their experience as a leisure time to learn about objects? Research by Doering (1999) shows that people are just as—if not more than—interested in seeing cultural objects as much as knowing the behind-the scenes working of the museum staff. The question perhaps then to ask is NOT whether to give wider education opportunities and access to the collection, but HOW MUCH of the heritage objects is the conservation department willing to show.

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APPENDIX A

Temperature and Relative Humidity Readings between 2003-2004 at PRM Main Court

Source: Foreman's Building Services Inc. *Pitt Rivers Museum Cooling Options* (Unpublished Report), July 2005

APPENDIX B
Elevation Drawings of Pitt Rivers Research Centre

The new PRRC will be seen only from two sides.. The principal entry (top) elevation faces Robinson Close. The east elevation (bottom) overlooks the space fronting buildings of the Sciences department. The other two elevations abut the existing PRM and UOM

The east elevation reflects the more basic functions of workshops and laboratories. The windows are shorter and its orientation does not necessitate sunshading. The south elevation reflects the activities within—teaching rooms for curators and collections management. These will have fully glazed walls with sliding units for natural ventilation with balconies that acts as sunshading. The stone elements contain the offices for new library and conservation laboratories within.

1 INTRODUCTION

1.1 Purpose and Nature of the Document

This document has been prepared for **Outline Design Stage E**. It records the design criteria, standards and scope of works for the Mechanical, Electrical, Public Health and Fire Protection services proposed for the Pitt Rivers Research Centre, Oxford.

This document should be considered as a living document, which develops as the design programme progresses, and other members of the team comment.

This document has been divided into separate sub-sections to cover:

- Design Criteria
- Mechanical Systems Proposals
- Electrical Systems Proposals
- Public Health Proposals
- Fire Protection Services Proposals
- Preliminary Room Data Sheets

Design criteria for each service have been discussed and agreed with Pitt Rivers Museum and the University Estates Directorate for the requirements of the Research Centre.

This document is not intended to be a fully detailed 'Particular Specification' which would be developed during the design stage of the project.

It is intended to provide an overview and clarification of the systems that have been proposed.

1.2 Development of the Design

The building services design has been developed in collaboration with the design team: principally, the client, the architect and the structural engineer. The University Estates Directorate has provided valuable information and record documentation.

The philosophy of design has been to minimise technology whilst achieving specific environmental criteria in particular areas. The areas of most concern to the client include:

- Artefact and archive storage areas, which require low and closely controlled temperature and humidity levels;
- Conservation and research areas, which require constant and stable levels of temperature and humidity.

Starting from the ideal of a totally naturally ventilated building, various options were considered and analysed with specific consideration to the areas of client concern above. The options that were considered are summarised in the Ventilation Options Matrix included in the Stage C Report.

Following this exercise, the design has been developed to encase critical storage areas within a buffer zone of temperature controlled research areas, the whole within a shell of naturally ventilated office and ancillary space. Special holding rooms are provided so that artefacts and archives may acclimatise when moving from storage to research areas.

Preliminary Room Data Sheets as received from the Users are appended to this report. The contents of the RDS are to be developed during the Stage E design process (e.g., the request of the Library for upper limit temperature control). Information on sketch plans attached to the original RDS shall also be included.

Careful management of doors between differing environmental zones will be necessary during the working life of the building in order to minimise stress on artefacts and archives.

All plant and equipment areas require to be sited and arranged so that installation and maintenance of plant and equipment can be carried out safely and expeditiously. Normal access shall be from floor level or by stairs of sufficient width to allow a person to carry tools and other items. Services shall be installed to UED requirements and BS8313.

Hatches, removable panels, lifting strong points etc shall be provided to allow air handling units, fans, motors and other heavy parts in the mezzanine plant room to be put in place or removed

Hatches, removable panels, lifting strong points etc shall be provided to allow air handling units, fans, motors, chillers, boilers and other heavy parts in the third floor plant room to be put in place or removed. Note that external cranage with a vertical lift to clear the peak of the roof and with a radius of approximately 30m will be required to be erected for each maintenance activity that cannot be carried out using the stairway.

1.3 Main Enabling Works & Demolition

Some existing structures on the site require to be demolished, together with the services within them. Some existing services that cross the site of the proposed building to serve other buildings require to be diverted.

1.3.1 Stage 1 Enabling Works Completed

Stage 1 preliminary enabling works were the subject of a previous specification 6101/M/SP01. These works included for demolition of services within the Green Shed and for provisions to facilitate diversion of existing gas and heating water pipes in such a way that service could be maintained during winter

1.3.2 Stage 2 Enabling Works Relocations & Demolition

Stage 2 main enabling works are part of this contract. They are required in order to relocate gas meters and gas installation pipework and to carry out diversion of heating water mains so that existing services to other buildings may be maintained at all times of the year with a minimum of disruption during construction of PRRC. Note that, in particular, the maximum period interruption to Human Anatomy gas supply is 2hours, and this is only permissible when agreed in writing by the Administrator of Human Anatomy.

Stage 2 enabling works include for mechanical, electrical and public health services to a new Safety Officer's Store near the Dyson Perrins Building.

Stage 2 enabling works also include for demolition or relocation of all building services within the 'lean to' annex to the main Pitt Rivers Museum building, in the Nitrogen Store and the Radiation Store. Where necessary, the supplies are to be capped off and made safe. Note that electrical supply to the Nitrogen Store and Radiation Store are believed to derive from Building 168 Inorganic Chemistry and not from PRM.

Occupancy	Lecture theatre:	90 persons
	Education area:	20 persons
	Temporary exhibits area:	one person per 2m2
	Research areas and laboratories:	one person per 7.5m².
	Holding and other areas:	one person per 15m2
	Heat output per person	90W (sensible) and 60W (latent).
Fresh Air	Perimeter offices and library	naturally ventilated
	(openable windows with trickle vents for background ventilation)	
	Vitiated air generally shall be discharged through the roof lantern and/or via the fresh air plant recuperator as required by the control system.	
	Mechanically ventilated areas	10L/s per person
Ventilation	Toilets	greater of 8L/s per person or 10ach
	Showers	30L/s per shower
	Wet areas	6ach
	Other ventilated stores	2ach
	Supply air for all extracted areas shall be from air supplied to the space and/or by transfer grilles from adjacent spaces.	
Heat Gains	Lighting	20W/m².
	Small Power	10w/m² generally.
	Server	350W/m2 of equipment heat load.
	Other Special Equipment	As listed in the room data schedules
Infiltration	Research Areas	All year 2 Air Changes per hour
	Air conditioned storage	All year 0.5 Air Change per hour
	Other Mechanically Ventilated Areas	All year 1 Air Change per hour
Construction	Thermal loads shall be computed assuming the minimum tranemittance values (U-Values) permitted by the Building Regulations Approved Document Part L.	
System Criteria		
Chillers:	Minimum of 2No each sized @ 50% of maximum simultaneous load.	
Boilers:	Minimum of 2No each sized @ 50% of estimated summer load.	
LTHW heat exchanger:	1No sized at 100% of maximum simultaneous winter load	
	Primary LTHW	82C / 71C
	Secondary LTHW	79C / 68C
Extract:	To operate whenever building is occupied.	

Pressure:	Building generally under negative pressure due to stack effect. Store rooms, Holding Rooms and Conservation Laboratory to be positive with respect to adjacent areas.
Smoke Control:	Refer to Fire Protection/Life Safety Strategy Document.
Stairwell pressurisation:	None included, subject to detail design development of Fire Protection & Life Safety and agreement with the District Surveyor and Fire Brigade.
Occupied Period:	12 hours/day plus occasional overtime
Internal low limit	10°C
Solar Shading:	External brise sole; Internal curtains/blinds.
Filtration Efficiency:	90% to euro vent 6. Mechanical ventilation plant shall provided with filtration equipment to:
	Pre filters EU3
	Main filters EU6

Internal Noise Levels (from Mechanical Systems)

Main entrance/Reception	NR40
Staircases/Lift Lobbies (Main Public Access)	NR40
Toilets & changing rooms	NR40
Meeting rooms/seminar rooms	NR35
Laboratories, Research Areas, Offices	NR35
Lecture theatre/Education & Exhibit areas	NR30
Stores (general)	NR45
Lift motor rooms	NR45
Plant rooms	NR45
IT & Comms.rooms	NR45

External noise level (from mechanical plant)

To Local Authority requirements
(Assumed for design as 55dBA at South Parks Road)

Internal finishes	To be advised
Fuel:	Natural gas taken from metered supplies
Plant locations:	Roof level, Mezzanine accessed from Ground Floor, fan coil units on all floors
Trace Heating;	Provided to all external exposed piped services.
Access for maintenance	All plant shall be arranged for safe and expeditious installation and maintenance – refer to introduction above and UED requirements

Stores	100 lux, locally switched
Display/Exhibition areas- exhibits insensitive to light	300 lux, dimmable. High vertical illuminance required
Display/Exhibition areas- exhibits sensitive to light	All lamps will have special Ultraviolet (UV) filters.
Server/IT equipment room	400 lux, locally switched
Conservation studios and workshops	400 lux, dimmable. Supplementary local lighting may be required. All lamps will have special Ultraviolet (UV) filters
All other areas: Light sensitive objects	Subject to special lighting requirements
Extremely light sensitive objects	Subject to special lighting requirements

5.	**Emergency Lighting**	Emergency lighting installation will be provided in accordance with BS5266 and comprise of 3 hour maintained self –contained units in public areas and non-maintained units in non-public areas.
6.	**Small Power Provision**	Small power provision will be provided by 13A switched twin and single socket outlets, switched/ unswitched connection units and DP switches as required.
7.	**Fire Alarm System**	An analogue/addressable fire alarm detection system to achieve an L1 standard of coverage in accordance with BS5839: 2002.
8.	**Telephone/Data containment**	Containment will be provided from the Comms/server room to designated riser location and around the circulation corridors to facilitate future wiring of the system by others.
9.	**Electrical Check Metering:**	Sub-metering will be provided as part of the main LV switchboard and on selected outgoing feeders to comply with building regulations part L and the University Estates Directorate requirements.
10.	**Lightning protection:**	A complete lightning protection scheme will be provided in accordance with BS6651.
11.	**Lift power supply:**	Main and alternate power supplies will be provided for the lift such that in the event of failure of the main supply, power will be supplied from the alternate source. The alternate source will be a feeder from the museum switchboard
12.	**Security system:**	A combination of card readers at designated entrances, door contacts, PIR's and CCTV cameras have been provided in compliance with the room data sheets.
13.	**Main contract enabling works:**	The existing switchboard in the Museum will be relocated into a storeroom in the Museum. Distribution boards located in or around the stairs to be demolished, will need to be protected and reconnected with new sub-mains to the relocated switchboard. All electrical services in the lean-to buildings to be demolished shall be made safe and removed. Items of equipment made redundant in which the University has expressed an interest to retain for spare etc, shall be carefully cleaned and handed over to the Estate's department.

2.6 Statutory Services Requirements

Mains water	An. MDPE supply with meter (pulse type with BMS connection). Connect to existing underground mains supply external to the building.
External drainage & sewer connection(s)	Refer to Structural Specification and Drawings..
Electrical supply	400V supply from Sub Station H.
Gas	80mm dia. MDPE supply with meter (pulse type with BMS connection). Connect to existing underground mains supply external to the building.
Telecommunicaltons	By others (some containment to be provided in this contract)

The Main Contractor shall be responsible for negotiations with the utility services providers and the preparation of such paperwork as necessary for the University Estates Directorate to enter into contract with the utility suppliers for gas, water and electricity supplies.